CHIP RESISTORS(ARRAY) APPROVED SPECIFICATION SHEET

1.INSTRUCTION

This sheet is the statement of chip resistor specification that EVER OHMS production can meet.

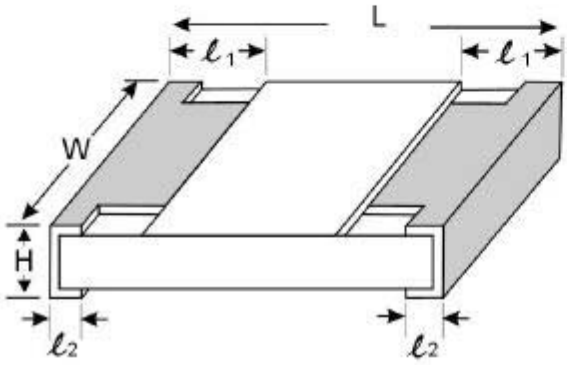
2.MATERIALS

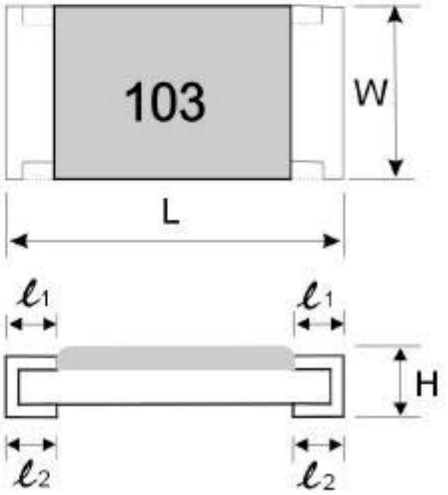
MATERIALS	MAIN CONTENTS
Alumina Substrate	Al2O3 OVER 96%
Electrode INK	Ag/Pd
Resistor INK	RuO2
1st coating INK	Glass
2nd coating INK	Glass
Electrode Plating Film	Ni,Sn/Pb
Packaging	Paper Tapping
Reel	PE

EVER OHMS

DIMENSION

☐ **0402/0603/0805/1206/1210/2010/2512**





Unit:mm

TYPE	L	W	H	ℓ_1	ℓ_2
0402	1.00 ±0.10	0.50 ±0.05	0.30 ±0.05	0.25 ±0.10	0.25 ±0.10
0603	1.55 ±0.15	0.80 ±0.15	0.40 ±0.10	0.30 ±0.15	0.30 ±0.15
0805	2.00 ±0.15	1.25 ±0.15	0.50 ±0.15	0.35 ±0.15	0.35 ±0.15
1206	3.10 ±0.15	1.55 ±0.15	0.55 ±0.15	0.45 ±0.20	0.45 ±0.20
1210	3.10 ±0.15	2.50 ±0.15	0.55 ±0.15	0.50 ±0.20	0.50 ±0.20
2010	5.00 ±0.20	2.50 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20
2512	6.30 ±0.20	3.20 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20

RATINGS

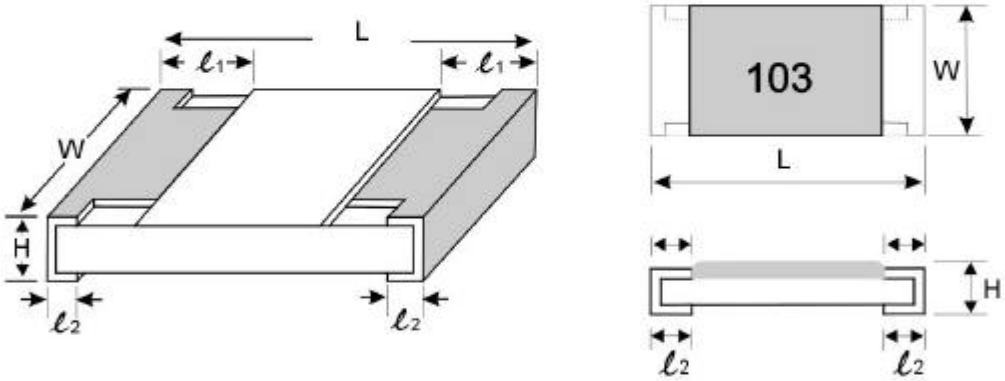
TYPE	Rated Power at 70°C	Max Working Voltage	Max Overload Voltage	T.C.R (PPM/°C)	Resistance Range				Jumper Rated Current	Jumper Resistance Value	Operating Temperature Range
					B(±0.1%) D(±0.5%)	F(±1%)	G(±2%)	J(±5%) K(±10%)			
CR02 (0402)	0.0625W	25V	50V	+500~-200			1Ω~9.9Ω	1Ω~9.9Ω	1A	50mΩ Max	-55°C ≈ +125°C
				+300~-300		10Ω~990Ω	10Ω~990Ω	10Ω~990Ω			
				+200~-200		1KΩ~1MΩ	1KΩ~1MΩ	1KΩ~1MΩ			
CR03 (0603)	0.1W	50V	100V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	1A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					
CR05 (0805)	0.125W	150V	300V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	1A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					
CR06 (1206)	0.25W	200V	400V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	2A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					
CR12 (1210)	0.333W	200V	400V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	2A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					
CR20 (2010)	0.5W	200V	400V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	2A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					
CR25 (2512)	1W	200V	400V	+400~-400		1Ω~9.9Ω	1Ω~9.9Ω	1Ω~9.9Ω	2A	50mΩ Max	
				+200~-200			10Ω~1MΩ	10Ω~10MΩ			
				+100~-100	10Ω~1MΩ	10Ω~1MΩ					

THICK FILM LOW OHM CHIP RESISTORS

Features

1.Most suitable as resistor for current detection in power source circuits, motor circuits. etc

2.Type 0805/1206/1210/2010/2512



Unit:mm

TYPE	L	W	H	ℓ_1	ℓ_2
0805	2.00 ±0.15	1.25 ±0.15	0.50 ±0.15	0.35 ±0.15	0.35 ±0.15
1206	3.10 ±0.15	1.55 ±0.15	0.60 ±0.15	0.45 ±0.20	0.45 ±0.20
1210	3.10 ±0.15	2.50 ±0.15	0.55 ±0.15	0.50 ±0.20	0.50 ±0.20
2010	5.00 ±0.20	2.50 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20
2512	6.30 ±0.20	3.20 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20

RATINGS

TYPE	Power Rating at 70°C	Rate Current Voltage(Vr)	Max Working Voltage(Vw)	Max Over Load Voltage(Vo)	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
0805	0.125 w	0.19 V~1.22 V	0.61 V	1.22 V	±800	±1%	0.02~0.99	-55°C~+125°C
					±1500	±5%	0.02~0.99	
1206	0.25 w	0.27 V~1.74 V	0.87 V	1.74 V	±800	±1%	0.02~0.99	-55°C~+125°C
					±1500	±5%	0.02~0.99	
1210	0.33 w	0.31 V~1.98 V	0.99 V	1.98 V	±800	±1%	0.02~0.99	-55°C~+125°C
					±1500	±5%	0.02~0.99	
2010	0.5 w	0.38 V~2.44 V	1.22 V	2.44 V	±800	±1%	0.02~0.99	-55°C~+125°C
					±1500	±5%	0.02~0.99	
2512	1.0 w	0.54 V~3.46 V	1.73 V	3.46 V	±800	±1%	0.02~0.99	-55°C~+125°C
					±1500	±5%	0.02~0.99	

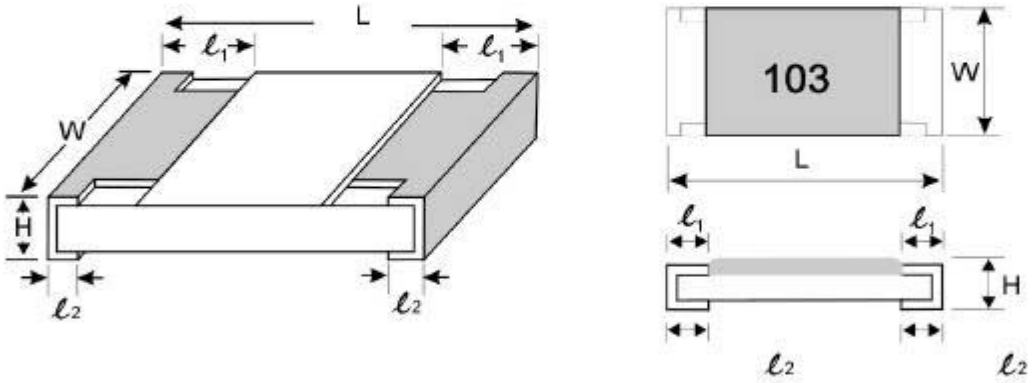
Rated Resistance

Resistance	Code	Resistance	Code	Resistance	Code	Resistance	Code	Resistance	Code
10mΩ	R010	68mΩ	R090	0.13Ω	R130	0.30Ω	R300	0.60Ω	R600
20mΩ	R020	70mΩ	R070	0.15Ω	R150	0.33Ω	R330	0.65Ω	R650
30mΩ	R030	75mΩ	R075	0.16Ω	R160	0.36Ω	R360	0.68Ω	R680
40mΩ	R040	80mΩ	R080	0.18Ω	R180	0.40Ω	R400	0.70Ω	R700
50mΩ	R050	90mΩ	R090	0.20Ω	R200	0.43Ω	R430	0.75Ω	R750
56mΩ	R056	0.10Ω	R100	0.22Ω	R220	0.47Ω	R470	0.80Ω	R800
60mΩ	R060	0.11Ω	R110	0.25Ω	R250	0.50Ω	R500	0.90Ω	R900
65mΩ	R065	0.12Ω	R120	0.27Ω	R270	0.56Ω	R560		

THICK FILM HIGH OHM CHIP RESISTORS

Features

1. Designed for use in compact instrumentation i.e.pyroelectric sensor etc.
2. Type 0402/0603/0805/1206/1210/2010/2512



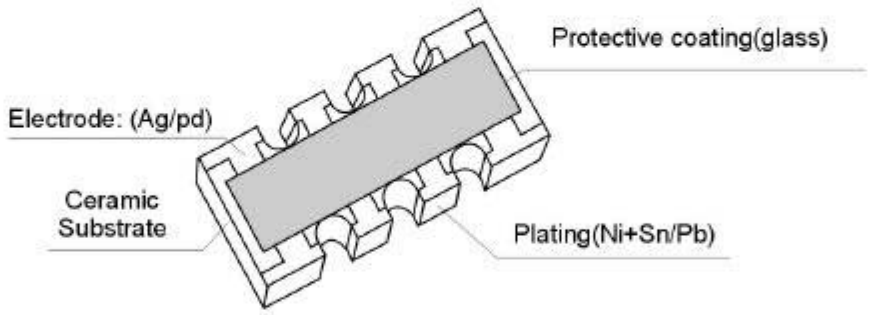
Unit:mm

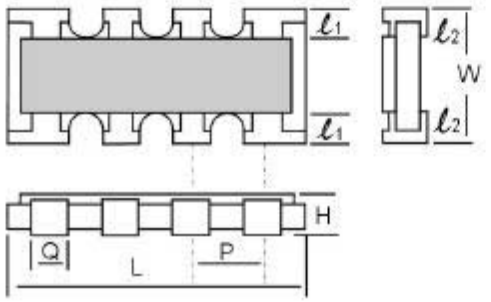
TYPE	L	W	H	ℓ_1	ℓ_2
0402	1.00 ±0.10	0.50 ±0.05	0.30 ±0.05	0.25 ±0.10	0.25 ±0.10
0603	1.55 ±0.15	0.80 ±0.15	0.40 ±0.10	0.30 ±0.15	0.30 ±0.15
0805	2.00 ±0.15	1.25 ±0.15	0.50 ±0.15	0.35 ±0.15	0.35 ±0.15
1206	3.10 ±0.15	1.55 ±0.15	0.55 ±0.15	0.45 ±0.20	0.45 ±0.20
1210	3.10 ±0.15	2.50 ±0.15	0.55 ±0.15	0.50 ±0.20	0.50 ±0.20
2010	5.00 ±0.20	2.50 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20
2512	6.30 ±0.20	3.20 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20

RATINGS

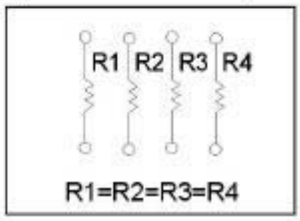
TYPE	Power Rating at 70°C	Max Working Voltage(Vw)	Max Over Load Voltage(Vo)	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
0402	0.0625 W	25 V	50 V	±200	±1%	10M	-55°C~+125°C
					±5%	54M	
					±10%	54M	
0603	0.1 W	50 V	100 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	
0805	0.125 W	150 V	300 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	
1206	0.25 W	200 V	400 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	
1210	0.33 W	200 V	400 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	
2010	0.5 W	200 V	400 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	
2512	1.0 W	200 V	400 V	±200	±1%	10.1M~54M	-55°C~+125°C
					±5%	10.1M~100M	
					±10%	10.1M~100M	

☐ CRA02 (0402 4 Elements 024R)
☐ CRA03 (0603 4 Elements 034R)





Equivalent Circuit Diagram



Unit: mm

DIMENSION / TYPE	L	W	H	ℓ1	ℓ2	P	Q
024R(0402)	2.00±0.10	1.00±0.10	0.40±0.10	0.20±0.10	0.20±0.10	0.50±0.10	0.30±0.10
034R(0603)	3.20±0.20	1.60±0.15	0.50±0.10	0.30±0.15	0.30±0.15	0.80±0.10	0.40±0.10

RATINGS

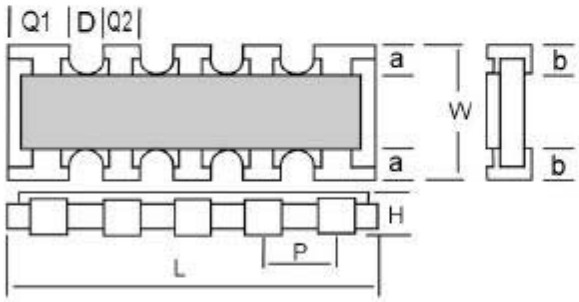
TYPE	Power Rating at 70°C	Rate Current of Jumper(A)	Max Working Voltage(Vw)	Max Over Load Voltage(Vo)	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
024R	0.063W	1A	25V	50V	±200	JUMPER	50m以下	-55°C~+125°C
						±1%	10~1M	
						±5%	10~1M	
034R	0.1W	1A	50V	100V	±200	JUMPER	50m以下	-55°C~+125°C
						±1%	10~1M	
						±5%	10~1M	

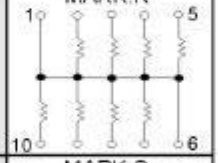
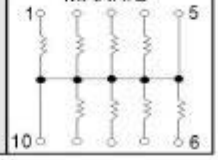
CRN02 (0402 8 elements 10P8R)

Features

1. This product is highly suitable for the purpose of pull-up and pull-down
2. It is easy to handle because of no specified direction for mounting due to the symmetrical placement of common terminal

Dimension



Type	Circute diagram
R	MARK:R 
S	MARK:S 

Unit: mm

TYPE	L	W	H	D	Q1	Q2	a	b	P
028R	3.20±0.20	1.60±0.10	0.55±0.10	0.32±0.10	0.53±0.10	0.32±0.10	0.30±0.15	0.30±0.15	0.64±0.10

RATINGS

TYPE	Rated Power at 70℃	Maximum Working Voltage (Vw)	Maximum Overload Voltage (Vo)	Temperature Coefficient of Resistance (PPM/℃)	Resistance Range	Resistance Tolerance	Operating Temperature (℃)
028R	0.063W	25V	50V	±200	10Ω~1MΩ	±5%	-55℃~+125℃

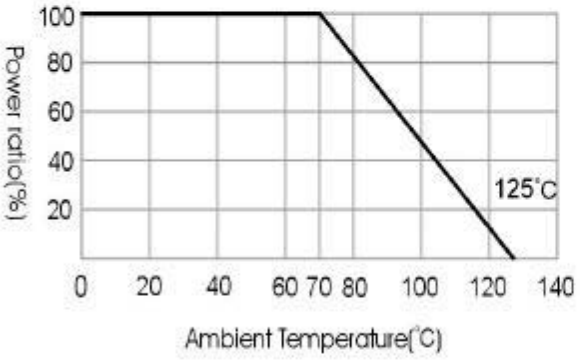
PERFORMANCE CHARACTERISTICS FOR CR SERIES

Test Item	Description	Test Methods
Temperature Coefficient of Resistance	Temp: -55°C~+125°C Requirement: 5% 1Ω~10Ω ≦ ±400PPM/°C 11Ω~10M≦ ±200PPM/°C 1% 10Ω~1MΩ ≦ ±100PPM/°C	JIS C 5202.....clause 5.2 Natural resistance change per temperature degree centigrade. $\frac{R2-R1}{R1(t2-t1)} \times 10^{6}$ (PPM/°C)
Short-Time Over load	(WV)=2.5$\sqrt{WR}$ ON 5 secs Requirement: ±(2.0%±0.1Ω)Max	JIS C 5202.....clause 5.5 Permanent resistance change after the application of a potential of 2.5 time RCWV. Or the max. Over load voltage respectively specified in the above list, whichever less for 5 secs
Strength Bending	Y/X=5/90mm FOR 10 secs Requirement : ±(1.0%±0.05Ω)Max	JIS C 5202.....clause 6.1.4 Bending Test: y/x=/90mm 1 time
Resistance to Soldering Heat	Test Temp : 260°C±5°C For 10secs Requirement : ±(1.0%±0.05Ω)Max	JIS C 5202.....clause 6.4 Test Temperature : 260±5°C Dip time : 10 secs
Temp Cycling	-55°C(30mins)→+25°C(10~15mins) +125°C(30mins)→+25°C(10~15mins)5 cycles Requirement : ±(1.0%±0.05Ω)Max	JIS C 5202.....clause 7.4 Resistance change after continuous five cycles for duty cycle specified below
Humidity (steady state)	Temp : 40°C±2°C R.H : 90~95% Continuous 1000 hrs Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.5 Temporary resistance change after 1000 hours exercise in a humidity test chamber controlled at 40±2°C and 90% to 95% relative humidity.
Loading Life in Moisture	Temp : 40°C ±2°C R.H : 90~95% (WV)=$\sqrt{WR}$ ON-1.5 hrs OFF-0.5hr Continuous 1000 hrs Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.9 Resistance change after 1000 hours (1.5h " on" 0.5h "off") at RCWV or max. less in a humidity chamber controlled at 40±2°C and 90% to 95% relative humidity
Load Life	Temp :70°C±2°C (WV)=$\sqrt{WR}$ Continuous 1000hrs ON-1.5 hrs OFF-0.5hr Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.10 Resistance change after 1000 hours operating at RCWV or max. RCWV, whichever less with duty cycle of 1.5h "on", 0.5h "off" at 70±2°C ambient

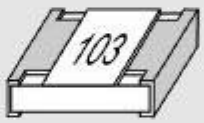
PERFORMANCE CHARACTERISTICS FOR CRN、CRA SERIES

Test Item	Description	Test Methods
Temperature Coefficient of Resistance	Temp: -55°C~+125°C Requirement: ±5% 10Ω~1MΩ ≦±200PPM/°C ±1% 100Ω~560KΩ ≦±100PPM/°C	JIS C 5202.....clause 5.2 Natural resistance change per temperature degree centigrade. $\frac{R2-R1}{R1(t2-t1)} X10^6$ (PPM/°C)
Short time Over load	(WV)=2.5$\sqrt{WR}$ ON 5 secs Requirement: ±(2.0%±0.1Ω)Max	JIS C 5202.....clause 5.5 Permanent resistance change after the application of a potential of 2.5 time RCWV. Or the max. over load voltage respectively specified in the above list, whichever less for 5 secs
Resistance to Soldering Heat	Test Temp : 260°C±5°C For 10secs Requirement : ±(1.0%±0.05Ω)Max	JIS C 5202.....clause 6.4 Test Temperature : 260±5°C Dip time : 10 secs
Temp Cycling	-55°C(30mins)→+25°C(10~15mins) +125°C(30mins)→+25°C(10~15mins)5 cycles Requirement : ±(1.0%±0.05Ω)Max	JIS C 5202.....clause 7.4 Resistance change after continuous five cycles for duty cycle specified below
Humidity (steady state)	Temp : 40°C±2°C R.H : 90~95% Continuous 1000 hrs Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.5 Temporary resistance change after 1000 hours exercise in a humidity test chamber controlled at 40±2°C and 90% to 95% relative humidity.
Loading Life in Moisture	Temp : 40°C ±2°C R.H : 90~95% (WV)=$\sqrt{WR}$ ON-1.5 hrs OFF-0.5hr Continuous 1000 hrs Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.9 Resistance change after 1000 hours (1.5h "on" 0.5h "off") at RCWV or max. RCWV, whichever less in a humidity chamber controlled at 40±2°C and 90% to 95% relative humidity
Load Life	Temp :70°C±2°C (WV)=$\sqrt{WR}$ Continuous 1000hrs ON-1.5 hrs OFF-0.5hr Requirement : ±(3.0%±0.1Ω)Max	JIS C 5202.....clause 7.10 Permanent resistance change after 1000 hours operating at RCWV or max. RCWV, whichever less with duty cycle of 1.5h "on", 0.5h "off "at 70±2°C ambient

DERATING CURVE



Marking

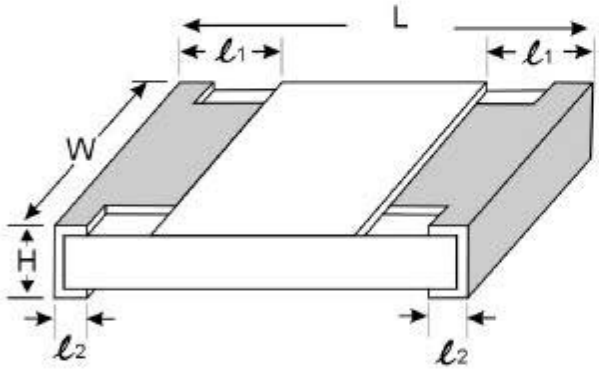


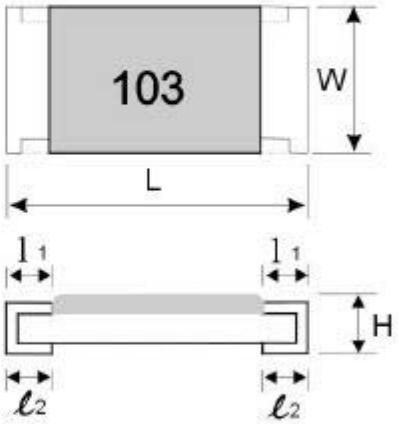
TYPE 0402:No marking Code
FOR E-24&E-96
◎2% · 5% 3 digit indication
1st 2 significant
3rd multiplier(10ⁿ)
EX. 56x 10^3=56000Ω=56KΩ
◎1% 4 digit indication
1st 3 significant
4th multiplier(10ⁿ)
EX. 392x 10^2=39200Ω=39.2KΩ

FOR 0603 1%(E-96)
◎3 digit indication
1st 2 significant for E-96 Part marking scheme
3rd multiplier:
Y=10^{-2} X=10^{-1} A=10^0 B=10^1
C=10^2 D=10^3 E=10^4 F=10^5

EVER OHMS

Type : 0603/0805/1206/1210/2010/2512





Unit: mm

TYPE	L	W	H	ℓ_1	ℓ_2
0603	1.55 ±0.15	0.80 ±0.15	0.40 ±0.10	0.30 ±0.15	0.30 ±0.15
0805	2.00 ±0.15	1.25 ±0.15	0.50 ±0.15	0.35 ±0.15	0.35 ±0.15
1206	3.10 ±0.15	1.55 ±0.15	0.60 ±0.15	0.45 ±0.20	0.45 ±0.20
1210	3.10 ±0.15	2.50 ±0.15	0.55 ±0.15	0.50 ±0.20	0.50 ±0.20
2010	5.00 ±0.20	2.50 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20
2512	6.30 ±0.20	3.20 ±0.20	0.55 ±0.10	0.60 ±0.20	0.60 ±0.20

RATINGS

TYPE	Power Rating at 70°C	Max Working Voltage(Vw)	Max Over Load Voltage(Vo)	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
0603	0.1 W	50 V	100 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C
0805	0.125 W	150 V	300 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C
1206	0.25 W	200 V	400 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C
1210	0.33 W	200 V	400 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C
2010	0.5 W	200 V	400 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C
2512	1.0 W	200 V	400 V	±200	±15% ±20%	10Ω~1MΩ 10Ω~1MΩ	-55°C~+125°C

PARTS NUMBER EXPLAINATION

☐EXAMPLE: CR06 103 J P

TYPE | NOMINAL RESISTANCE | RESISTOR TOLERANCE | PACKAGE

Type	
1005(0402)	CR02
1600(0603)	CR03
2012(0805)	CR05
3216(1206)	CR06
3125(1210)	CR12
5025(2010)	CR20
6332(2512)	CR25
0402 4 elements	CRA02
0603 4 elements	CRA03
0402 8 elements	CRN02

Nominal Resistance	
E24 Series Eg. 10k=103 2.7Ω=2R7	3-Digits
E96 Series Eg. 10k=1002 10.2Ω=10R2	4-Digits
Zero Ohm (Jumper)	000

Resistor Tolerance	
B	±0.1%
D	±0.5%
F	±1%
G	±2%
J	±5%
K	±10%
O	Jumper

P

Package	
P	Paper Tapping
B	Bulk

EVER OHMS

☐ EXAMPLE : CRA03 103 J P
CRA02 103 J P

CRA03	103	J	P
A	C	D	E

CRA02	103	J	P
B	C	D	E

A.Type (CRA03 0603) ARRAY

B.Type (CRA02 0402) ARRAY

C.Resistance Value(E-24 E-96 Series) 10K

D.Tolerance (F: ±1% J : ±5% K : ±10%)

E.Packing (P : 5000pcs Per Tape Reel)

☐ EXAMPLE : CRN02 103 J P R

CRN02	103	J	P	R
A	B	C	D	E

A.Type(CRN02 Resistor Network 0402 10P8R)

B.Resistance Value (E-24 Series)

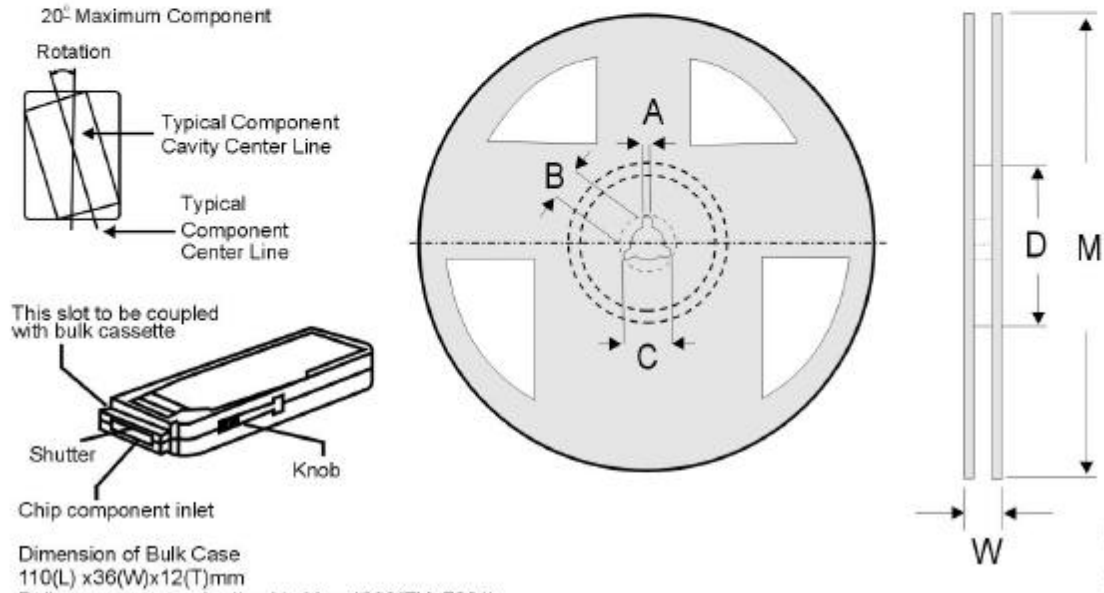
C.Tolerance (J : ±5% K : ±10%)

D.Packing (P:5000pcs Per Tape Reel)

E.Circuit diagram (R type)

PACKAGING

☐ REEL DIMENSION(mm)

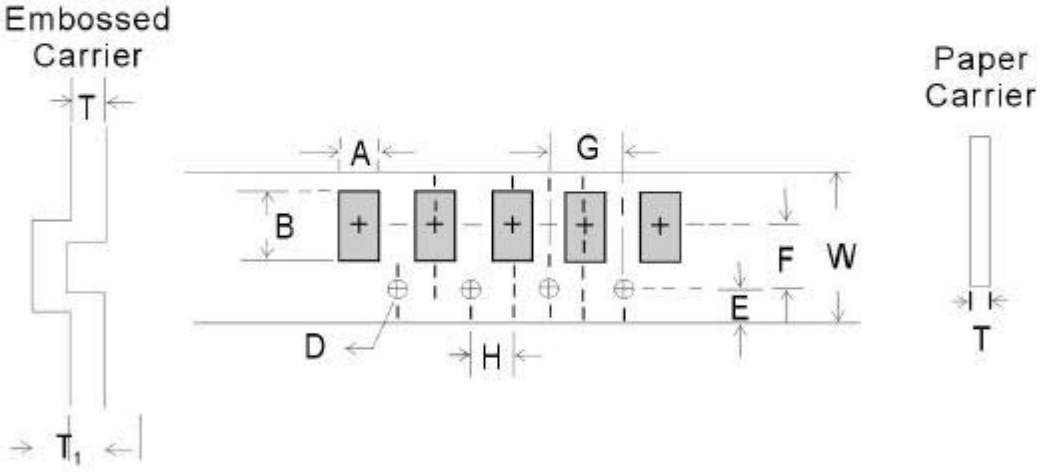


Dimension of Bulk Case
110(L) x36(W)x12(T)mm
Bulk case was standardized in Mar. 1992(EIA-7201)

Unit:mm

TYPE	SIZE		A	B	C	D	W	M
0603 0805 1206	7"	5K/Reel	2.0±0.5	13.5±2.0	21±0.5	60±0.5	12.5±2.0	178±2.0
	10"	10K/Reel	2.0±0.5	13.5±2.0	21±0.5	80±0.5	12.5±2.0	254±2.0
	13"	20K/Reel	2.0±0.5	13.5±2.0	21±0.5	80±0.5	12.5±2.0	330±2.0
1210 034R 028R	7"	5K/Reel	2.0±0.5	13.5±2.0	21±0.5	60±0.5	12.5±2.0	178±2.0
0402 024R	7"	10K/Reel	2.0±0.5	13.5±2.0	21±0.5	60±0.5	12.5±2.0	178±2.0
2010 2512	7"	4K/Reel	2.0±0.5	13.5±2.0	21±0.5	60±0.5	16.0±2.0	178±2.0

☐ TAPING SPECIFICATION



Unit:mm

Packaging	Size	A	B	W	E	F	G	H	T	D	T_1
Paper Type	028R	1.90±0.1	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5+0.1 -0	
	024R	1.20±0.1	2.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	2.0±0.1	2.0±0.05	0.60±0.10	1.5+0.1 -0	
	0402	0.70±0.1	1.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	2.0±0.1	2.0±0.05	0.45±0.10	1.5+0.1 -0	
	034R	1.90±0.2	3.45±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5+0.1 -0	
	0603	1.05±0.2	1.80±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.10	1.5+0.1 -0	
	0805	1.55±0.2	2.30±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5+0.1 -0	
	1206	1.90±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5+0.1 -0	
	1210	2.85±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5+0.1 -0	
TE Embossed	2010	2.80±0.2	5.60±0.2	12±0.2	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.15	1.5+0.1 -0	0.85±0.15
	2512	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.15	1.5+0.1 -0	0.85±0.15

STANDARD RESISTANCE VALUES IN A DECADE

for resistances and capacitances
According to IEC publication 63

E192	E96	E48	E192	E96	E48	E192	E96	E48	E192	E96	E48	E192	E96	E48
100	100	100	169	169	169	287	287	287	487	487	487	825	825	825
101			172			291			493			835		
102	102		174	174		294	294		499	499		845	845	
104			176			298			505			856		
105	105	105	178	178	178	301	301	301	511	511	511	866	866	866
106			180			305			517			876		
107	107		182	182		309	309		523	523		887	887	
109			184			312			530			898		
110	110	110	187	187	187	316	316	316	536	536	536	909	909	909
111			189			320			542			920		
113	113		191	191		324	324		549	549		931	931	
114			193			328			556			942		
115	115	115	196	196	196	332	332	332	562	562	562	953	953	953
117			198			336			569			965		
118	118		200	200		340	340		576	576		976	976	
120			203			344			583			988		
121	121	121	205	205	205	348	348	348	590	590	590			
123			208			352			597					
124	124		210	210		357	357		604	604		E24	E12	E6	E3
126			213			361			612			10	10	10	10
127	127	127	215	215	215	365	365	365	619	619	619	11			
129			218			370			626			12	12		
130	130		221	221		374	374		634	634		13			
132			223			379			642			15	15	15	
133	133	133	226	226	226	383	383	383	649	649	649	16			
135			229			388			657			18	18		
137	137		232	232		392	392		665	665		20			
138			234			397			673			22	22	22	22
140	140	140	237	237	237	402	402	402	681	681	681	24			
142			240			407			690			27	27		
143	143		243	243		412	412		698	698		30			
145			246			417			706			33	33	33	
147	147	147	249	249	249	422	422	422	715	715	715	36			
149			252			427			723			39	39		
150	150		255	255		432	432		732	732		43			
152			258			437			741			47	47	47	47
154	154	154	261	261	261	442	442	442	750	750	750	51			
156			264			448			759			56	56		
158	158		267	267		453	453		768	768		62			
160			271			459			777			68	68	68	
162	162	162	274	274	274	464	464	464	787	787	787	75			
164			277			470			796			82	82		
165	165		280	280		475	475		806	806		91			
167			284			481			816						

(CR03) 0603 E-96 MULTIPLIER CODE

Code	A	B	C	D	E	F	G	H	X	Y	Z
Multiplier	10^0	10^1	10^2	10^3	10^4	10^5	10^6	10^7	10^{-1}	10^{-2}	10^{-3}

CODING FORMULA
XX X
Resistance Code — Multiplier Code

Example: 10.2kΩ = $\frac{102}{02} \times \frac{10^2\Omega}{C}$ =02C

33.2Ω = $\frac{332}{51} \times \frac{10^{-1}}{x}$ =51x

(CR03) STANDARD E-96 VALUES AND 0603 RESISTANCE CODE

R-Value	Code	R-Value	Code	R-Value	Code	R-Value	Code
100	01	178	25	316	49	562	73
102	02	182	26	324	50	576	74
105	03	187	27	332	51	590	75
107	04	191	28	340	52	604	76
110	05	196	29	348	53	619	77
113	06	200	30	357	54	634	78
115	07	205	31	365	55	649	79
118	08	210	32	374	56	665	80
121	09	215	33	383	57	681	81
124	10	221	34	392	58	698	82
127	11	226	35	402	59	715	83
130	12	232	36	412	60	732	84
133	13	237	37	422	61	750	85
137	14	243	38	432	62	768	86
140	15	249	39	442	63	787	87
143	16	255	40	453	64	806	88
147	17	261	41	464	65	825	89
150	18	267	42	475	66	845	90
154	19	274	43	487	67	866	91
158	20	280	44	499	68	887	92
162	21	287	45	511	69	909	93
165	22	294	46	523	70	931	94
169	23	301	47	536	71	953	95
174	24	309	48	549	72	976	96